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In the accompanying illustration the distinguishing characters are all clearly marked, with the exception of the calyptra. The photographs were



taken from dried herbarium material. a. *P. brevicaulis*; b. *P. brachyphyllum*. Both four times natural size.

NEW DORP, N. Y., JUNE, 1919

MOSSES AS FORMERS OF TUFA AND OF FLOATING ISLANDS

ARAVILLA TAYLOR

In an article by W. H. Emig in THE BRYOLOGIST of March, 1918, the author described certain species of moss, *Didymodon tophaceus* (Brid.) Jur. and *Philonotis calcarea* Sch., as rock builders in the waterfalls in the Arbuckle Mountains of Oklahoma.

A somewhat similar, although probably a less extensive, formation has been observed in the outlets of various mineral springs in Indiana and Illinois where mosses aid in forming a rock-like tufa.

At Otis, Indiana, and New Lenox, Illinois, there are numerous springs, the water of which is highly impregnated with iron compounds. In the outlet of such a spring is frequently found large quantities of *Brachythecium rivulare* B. & S.

As the iron compounds penetrate the moss tissue, a hard porous tufa is formed which becomes a part of the accumulation of bog iron ore about these springs. Together with other species of plants this moss may aid in building up a mound so high as to make it necessary for the water of the spring to find a new and lower place of escape.

Very much the same situation occurs at Turkey Run, Indiana, where *Cratoneuron filicinum* (L.) Roth. is found as a tufa former in calcareous springs.

Near the head of Lake Michigan in northern Indiana are many ponds, forming a series extending southward from the present beach. These are long, narrow lagoons cut off originally from the lake proper by barrier beaches which were built up near the lake margin by water currents, and which lie nearly parallel to the shore line. The lagoons vary in depth and size as well as in ecological age, while the ridges or old sand bars are now, in many cases, forested with oak.

In some of the deeper lagoons are floating islands which seem to have had their origin in a surface mat formed over the water as in the case of quaking bogs. Portions of the mat have here broken loose from the shore, and now form small islands floating without attachment to bottom or margin.

One of the chief agents in the formation of the mat, and still found in great abundance on the islands, is *Campylium stellatum* (Schreb.) Bryhn. The same species of moss has been found along the margin of the smaller lagoons, in the shallow pine "pannes" among the sand dunes near Miller, Indiana, and on the surface mat of the quaking bog at Mineral Springs, Indiana. This species does not form a tufa, as in the former case, but takes a large part in filling up bodies of water by growth upon the ground either submerged or emerging, and by aiding in the formation of a surface mat.

The pannes are low depressions among the dunes frequently with the surface little, if at all, above the lake level. Water sweeps through the sand from the lake or from streams during times of high water-level. It may rise only to the surface or may, in some instances, reach a depth of a foot or more. Around the margin of the deeper ponds may be found cottonwoods or willows, or if the panne is of an older ecological succession, the edge may be bordered with pines. Here *Campylium stellatum* is often abundant either submerged or above the surface at the margin and many may be found growing even among the pines.

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A HERBARIUM NOTE

EDWARD B. CHAMBERLAIN

For several years it has been impossible for me to keep the larger portion of my herbarium in New York, owing to lack of room. In order to have for comparison a series of authentic specimens, I have mounted in the manner described below a number of sets of exsiccati, and it may be that the method